

### **DETAILED ACTION**

Claims 1-9, 63 and 72-73 are pending and examined.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent 7,223,909 filed 3/20/2003 in view of U.S. Patent 6,252,141 issued 2001 and U.S.

Patent 5,965,795 issued 1999.

The claims are broadly drawn to genetically modified nonhuman organisms transformed to have modified beta cyclase and ketolase activities for the production of ketocarotenoids.

U.S. Patent 7,223,909 teaches Marigold transformed with a ketolase and a beta cyclase in Claims 1 and 18 for the production of ketocarotenoids.

U.S. Patent 5,965,795 discloses SEQ ID NO: 4 a ketolase.

U.S. Patent 6,252,141 discloses SEQ ID NO: 2 a beta cyclase.

It would have been obvious to one of ordinary skill in the art to substitute the ketolase and cyclase taught by 7,223,909 for the ketolase of SEQ ID NO: 4 and the beta cyclase of SEQ ID NO: 2 of the '795 and '141 Patents respectively and to use the combination of a ketolase and a beta cyclase taught in the '909 Patent in species that do not have a native ketolase encoding gene, one of ordinary skill would have a reasonable expectation of success given the success of the '909 patent and given the knowledge

Art Unit: 1638

common in the art that ketolase and cyclase sequences were available and knowledge of their function to produce ketoarotenoids was common.

No claims is allowed.

Art Unit: 1638

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KALLIS whose telephone number is (571)272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell Kallis/  
Primary Examiner, Art Unit 1638  
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